

Appl. No. 09/893,973
Amdt. dated Sept. 5, 2003
Reply to Office Action of June 5, 2003

REMARKS

Reconsideration and allowance in view of the following amendments and remarks are respectfully requested.

Claims 1-3, 6-12, and 16-18 remain in this application. Claims 13-15 have been withdrawn as the result of an earlier restriction requirement. Applicant appreciates the indication of allowable subject matter in claims 4, 5, 7, and 9. Accordingly, claims 4 and 5 have been canceled. The limitations of claim 4 have been added to currently amended claim 1, and claim 5 has been rewritten in independent form, including all of the limitations of the base claim and any intervening claims, as new claim 16. Additionally, claims 17 and 18 have been added and correspond to original claims 7 and 9 in independent form.

In view of the examiner's earlier restriction requirement, applicant retains the right to present claims 13-15 in a divisional application.

Response to Prior Art Rejection

As discussed, the limitations of allowable claim 4 have been added to currently amended claim 1. It is submitted that the amendment to claim 1 obviates all of the rejections of the original claims. However, to compact prosecution of this case, Applicants will further discuss the rejections with respect to the claims, and this discussion is not meant to limit the claims beyond the amendment of claim 1.

Claims 1, 6, and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee (U.S. Patent No. 4,336,273) in view of Hsieh (U.S. Patent No. 4,844,933) and Subramaniam et al. (U.S. Patent No. 5,645,876) and Mori (JP 63258558A) and Simpukas (U.S.

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Patent NO. 6,139,890). Claims 2 and 3 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over these combined references, and further in view of Jakobsson et al. (U.S. Patent No. 4,647,469). Claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the above combined references as applied to claims 1, 6, and 12, and further in view of Waitman et al. (U.S. Patent No. 4,364,968). Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the above combined references as applied to claims 1, 6, and 12, and further in view of Linaberry (U.S. Patent No. 3,973,047). Finally, claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the above combined references as applied to claims 1, 6, and 12, and further in view of Costanzo et al. (U.S. Patent No. 5,518,740). Applicant believes that the cited references do not disclose or suggest all terms of the rejected claims.

The disclosure of Claim 1 of the present application differs from the invention disclosed in Lee (4,336,273) in the following aspects:

- Lee's invention is based on stabilizing the texture and shape of fresh fruits and vegetables preserved by canning by treating them with certain organic compounds prior to heating the canned product (col. 1, lines 50-55). Therefore, the canned product is heated in a solution state after being immersed in syrup (EXAMPLE 1). In contrast, in the present application, the cut peppers are heated in a solid state at a high-temperature with high-pressure steam. As such, the drying process of the present application is technically in opposition with that of Lee's invention.

- Lee enumerates washing, peeling, seed removal, blanching, and cutting into halves, chunks, slices or strips as examples of pre-heating processes (col. 3, lines 65-70). However,

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Lee does not disclose the precise order of the pre-heating processes of the present invention, i.e., screening, aging, washing, sterilizing, cutting, and separating seeds.

- Another characteristic feature of the present application lies in doubly sterilizing the outside and inside of peppers. This is because pepper has a greater internal latent heat and higher post-harvest degradation rate than other products and 1000 times more microorganisms exist in the pepper flesh than in the pepper skin (page 1, lines 13-14, page 2, lines 3-4).

However, Lee does not teach or suggest the above technical feature.

The disclosure of Claim 1 of the present application differs from the invention disclosed in Simpukas (6,139,890) in the following aspects:

- Simpukas discloses only carboxylic acids as a chemical sterilizer. However, carboxylic acids are not enough for hygienically preparing dried peppers as presented in the present application, wherein both the inside and outside of peppers undergo sterilization.

- Simpukas does not disclose most of the processes of the present invention, i.e., screening, aging, washing, sterilizing outside, cutting and separating seeds, sterilizing the inside, drying and grinding.

The disclosure of Claim 1 of the present application differs from the invention disclosed in Hsieh et al. (4,844,933) in the following aspects:

- Hsieh discloses only steam sterilizing processes (col. 4, lines 34-40). However, the steam sterilizing processes do not suffice for hygienically preparing dried peppers as presented in the present application, wherein both the inside and outside of peppers undergo sterilization.

- The invention of Hsieh is directed to avoid loss of volatile oils or excessive loss of moisture during the sterilization process of raw vegetable product (see Abstract). Therefore,

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the drying process of the present invention is technically in opposition with that disclosed in Hsieh.

The disclosure of Claim 1 of the present application differs from the invention disclosed in Subramaniam (5,645,876) in the following aspects:

- The present application includes hot air drying as one of its technical components.

However, Subramaniam discloses that forced air drying is not good for drying fruits and vegetables because it removes water therefrom, thus causing the cell wall structure of the dried materials to release turgor pressure and collapse (col. 1, lines 29-34). Therefore, Subramaniam teaches against one of technical components of the present invention (negative teaching). The negative teaching provides good evidence of non-obviousness because if one skilled in the art were to read the reference, he/she would not follow the path set out in the cited reference but a different approach.

- Subramaniam necessitates activating the endogenous pectinmethylesterase enzyme in an aqueous solution at a certain temperature in order to preserve the cell wall structure of vegetables during dehydration (col. 1, lines 59-64). However, the present application does not necessitate any pre-treatments before drying because the ground peppers do not have any shrinkage problems.

The disclosure of Claim 1 of the present application differs from the conventional freeze-drying process in that this process is not carried out after continuous sterilization of peppers as in the present application.

The disclosure of Claim 1 of the present application differs from the invention disclosed in Mori et al. (JP 63258558A) in the following aspects:

- Mori discloses drying and grinding as general processes for producing dried pepper.

However, as seen in the background section of the present application, the conventional method for preparing dried pepper can not be regarded as a hygienic method because 1000 times more microorganisms exist in the pepper flesh than pepper skin (page 2, lines 3-4). Therefore, the present application uses multi-sterilizing processes to overcome the above problem of the conventional method.

The disclosure of Claim 6 of the present application differs from the invention disclosed in Hsieh et al. (4,844,933) in the following aspects:

- Hsieh discloses only steam sterilizing processes (col. 4, lines 34-40). However, the steam sterilizing processes do not suffice for hygienically preparing dried peppers as presented in the present application, wherein both the inside and outside of peppers undergo sterilization.

- The invention of Hsieh is directed to avoid loss of volatile oils or excessive loss of moisture in sterilizing process of raw vegetable product (see Abstract). Therefore, the drying process of the present invention is technically in opposition with that disclosed in Hsieh.

- Hsieh does not adopt multiple sterilizing processes as presented in the present application. Therefore, if a skilled person uses only the steam process for sterilizing peppers, the determined temperature and length of the process should be different from those disclosed in the present application.

The disclosure of Claim 12 of the present application differs from the conventional foreign particles-removing processes in the use of a laser. Further, the timing of the iron particles-separating process is another characteristic feature of the present application because iron particles can appear and contaminate the pepper after the grinding process has been

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performed.

The disclosure of Claim 2 of the present application differs from the conventional deep freezing process in the timing of deep freezing in the present application. For example, if deep freezing is carried out after washing or chemical sterilization processes, the texture of pepper can be deteriorated due to remaining moisture.

The disclosure of Claim 3 of the present application differs from the invention disclosed in Jakobsson et al. (4,647,469) in that Jakobsson discloses deep freezing as a conventional final process of apple pieces (see Abstract). However, while it is an important step, it is difficult to determine when deep freezing should be carried out while processing dry peppers that undergo multiple sterilization procedures.

The disclosure of Claim 8 of the present application differs from the invention disclosed in Waitman et al. (4,364,968) in the following aspects:

- Waitman discloses on page 4, lines 1-5, that using a glucose solution is conventional in general food processing, not in multi-sterilizing processes of peppers as in the present application.

- Waitman discloses that hydrophilic carbohydrate infusion should be carried out just before drying and the dry grapes should be stored under controlled humidity for maintaining the softness of raisins (see Abstract). However, the present application teaches that a treatment with a sugar solution should be carried out between chemical and steam sterilizing processes and the peppers should be perfectly dried and ground.

The disclosure of Claim 10 of the present application differs from the invention disclosed

in Linaberry (3,973,047) in the following aspects:

- Linaberry discloses not two stages of drying but three, i.e., partial drying -> humid air pasteurization -> further drying (col. 5, lines 5-35).
- In Linaberry, the sterilization (pasteurization) process is carried out within the drying processes. However, in the present application, the sterilization processes are carried out before the drying processes.
- The present application comprises chemical and steam sterilization processes as technical components. However, Linaberry discloses that the chemical and steam processes are not good because the former can impair the color, flavor, and texture of the dehydrated vegetable products and the latter may require a redrying step (col. 1, lines 60-68, col. 2 lines 1-11). Therefore, Linaberry teaches against the technical components of the present application (negative teaching). The negative teaching provides good evidence of non-obviousness because if one skilled in the art were to read the reference, he/she would not follow the path set out in the present application but a different approach.

The disclosure of Claim 11 of the present application differs from the invention disclosed in Costanzo et al. (5,518,740) in that Costanzo et al. discloses that freeze drying is carried out precisely at 30 degrees C (col. 6, lines 30-49). However, in the present application, freeze drying is carried out at 45-70 degrees C. Therefore, Costanzo et al. do not encompass the range claimed in the present application.

Due to the above technical differences, dried peppers can be more hygienically prepared using the present application than in each of the inventions disclosed in the cited references. Therefore, because the cited references fail to teach or suggest the above

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technical features of the present application, it would not have been evident to one of ordinary skill in the art to employ these technical features.

Accordingly, Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

RESPECTFULLY SUBMITTED,					
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